<u>RAW SEQUENCE LISTING</u>

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _____ 10/586, 072A_

Source: _____ IFWO_

Date Processed by STIC: _____ 11/09/2006_

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IFWO

RAW SEQUENCE LISTING   DATE: 11/09/2006
PATENT APPLICATION: US/10/586,072A   TIME: 09:00:52

Input Set : A:\253625.ST25.txt
Output Set: N:\CRF4\11092006\J586072A.raw

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     3 <110> APPLICANT: BROUGH, DOUGLAS E.
     5 <120> TITLE OF INVENTION: METHODS OF GENE THERAPY FOR TREATING DISORDERS OF THE EAR BY
     6       ADMINSTERING A VECTOR ENCODING AN ATONAL-ASSOCIATED FACTOR
     8 <130> FILE REFERENCE: 253625
C--> 10 <140> CURRENT APPLICATION NUMBER: US/10/586,072A
C--> 10 <141> CURRENT FILING DATE: 2006-07-14
    10 <150> PRIOR APPLICATION NUMBER: PCT/US04/04891
    11 <151> PRIOR FILING DATE: 2004-02-19
    13 <150> PRIOR APPLICATION NUMBER: US 10/373,249
    14 <151> PRIOR FILING DATE: 2003-02-24
W--> 15 <160> NUMBER OF SEQ ID: 7
    17 <170> SOFTWARE: PatentIn version 3.3
    19 <210> SEQ ID NO: 1
    20 <211> LENGTH: 351
    21 <212> TYPE: PRT
    22 <213> ORGANISM: Mus musculus
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    31             20                  25                  30
    34 Pro Gln Pro Pro Ala Thr Leu Gln Ala Arg Asp Leu Pro Val Tyr Pro
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    39     50                  55                  60
    42 Pro Thr Leu Gln Gly Leu Cys Thr Ala Arg Ala Ala Gln Tyr Leu Leu
    43 65                  70                  75                  80
    46 His Ser Pro Glu Leu Gly Ala Ser Glu Ala Ala Ala Pro Arg Asp Glu
    47              85                  90                  95
    50 Ala Asp Ser Gln Gly Glu Leu Val Arg Arg Ser Gly Cys Gly Gly Leu
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    54 Ser Lys Ser Pro Gly Pro Val Lys Val Arg Glu Gln Leu Cys Lys Leu
    55         115                 120                 125
    58 Lys Gly Gly Val Val Val Asp Glu Leu Gly Cys Ser Arg Gln Arg Ala
    59     130                 135                 140
    62 Pro Ser Ser Lys Gln Val Asn Gly Val Gln Lys Gln Arg Arg Leu Ala
    63 145                 150                 155                 160
    66 Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly Leu Asn His Ala Phe
    67             165                 170                 175
    70 Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn Asn Asp Lys Lys Leu
    71             180                 185                 190
    74 Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile Tyr Ile Asn Ala Leu
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PATENT APPLICATION: **US/10/586,072A**   TIME: 09:00:52

Input Set : **A:\253625.ST25.txt**
Output Set: **N:\CRF4\11092006\J586072A.raw**

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83  225             230             235             240
86  Tyr Glu Gly Gly Ala Gly Ala Ser Ala Val Ala Gly Ala Gln Pro Ala
87              245             250             255
90  Pro Gly Gly Gly Pro Arg Pro Thr Pro Pro Gly Pro Cys Arg Thr Arg
91              260             265             270
94  Phe Ser Gly Pro Ala Ser Ser Gly Gly Tyr Ser Val Gln Leu Asp Ala
95          275             280             285
98  Leu His Phe Pro Ala Phe Glu Asp Arg Ala Leu Thr Ala Met Met Ala
99      290             295             300
102 Gln Lys Asp Leu Ser Pro Ser Leu Pro Gly Gly Ile Leu Gln Pro Val
103 305             310             315             320
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129 Pro Gln Pro Pro Ala Thr Leu Gln Ala Arg Asp Leu Pro Val Tyr Pro
130         35              40              45
133 Ala Glu Leu Ser Leu Leu Asp Ser Thr Asp Pro Arg Ala Trp Leu Thr
134     50              55              60
137 Pro Thr Leu Gln Gly Leu Cys Thr Ala Arg Ala Ala Gln Tyr Leu Leu
138 65              70              75              80
141 His Ser Pro Glu Leu Gly Ala Ser Glu Ala Ala Ala Pro Arg Asp Glu
142             85              90              95
145 Ala Asp Ser Gln Gly Glu Leu Val Arg Arg Ser Gly Cys Gly Gly Leu
146             100             105             110
149 Ser Lys Ser Pro Gly Pro Val Lys Val Arg Glu Gln Leu Cys Lys Leu
150         115             120             125
153 Lys Gly Gly Val Val Val Asp Glu Leu Gly Cys Ser Arg Gln Arg Ala
154     130             135             140
157 Pro Ser Ser Lys Gln Val Asn Gly Val Gln Lys Gln Arg Arg Leu Ala
158 145             150             155             160
161 Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly Leu Asn His Ala Phe
162             165             170             175
165 Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn Asn Asp Lys Lys Leu
166             180             185             190
169 Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile Tyr Ile Asn Ala Leu
170         195             200             205
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173 Ser Glu Leu Leu Gln Thr Pro Asn Val Gly Glu Gln Pro Pro Pro
174     210             215             220
177 Thr Ala Ser·Cys Lys Asn Asp His His His Leu Arg Thr Ala Ser Ser
178 225             230             235             240
181 Tyr Glu Gly Gly Ala Gly Ala Ser Ala Val Ala Gly Ala Gln Pro Ala
182             245             250             255
185 Pro Gly Gly Gly Pro Arg Pro Thr Pro Pro Gly Pro Cys Arg Thr Arg
186 .           260             265             270
189 Phe Ser Gly Pro Ala Ser Ser Gly Gly Tyr Ser Val Gln Leu Asp Ala
190             275             280             285
193 Leu His Phe Pro Ala Phe Glu Asp Arg Ala Leu Thr Ala Met Met Ala
194     290             295             300
197 Gln Lys Asp Leu Ser Pro Ser Leu Pro Gly Gly Ile Leu Gln Pro Val
198 305             310             315             320
201 Gln Glu Asp Asn Ser Lys Thr Ser Pro Arg Ser His Arg Ser Asp Gly
202             325             330             335
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220 Gly Asp His His Arg Gln Pro Gln Pro His His Leu Pro Gln Pro Pro
221             20              25              30
224 Pro Pro Pro Gln Pro Pro Ala Thr Leu Gln Ala Arg Glu His Pro Val
225             35              40              45
228 Tyr Pro Pro Glu Leu Ser Leu Leu Asp Ser Thr Asp Pro Arg Ala Trp
229     50              55              60
232 Leu Ala Pro Thr Leu Gln Gly Ile Cys Thr Ala Arg Ala Ala Gln Tyr
233 65              70              75              80
236 Leu Leu His Ser Pro Glu Leu Gly Ala Ser Glu Ala Ala Ala Pro Arg
237             85              90              95
240 Asp Glu Val Asp Gly Arg Gly Glu Leu Val Arg Arg Ser Ser Gly Gly
241             100             105             110
244 Ala Ser Ser Ser Lys Ser Pro Gly Pro Val Lys Val Arg Glu Gln Leu
245             115             120             125
248 Cys Lys Leu Lys Gly Gly Val Val Val Asp Glu Leu Gly Cys Ser Arg
249     130             135             140
252 Gln Arg Ala Pro Ser Ser Lys Gln Val Asn Gly Val Gln Lys Gln Arg
253 145             150             155             160
256 Arg Leu Ala Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly Leu Asn
257             165             170             175
260 His Ala Phe Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn Asn Asp
261             180             185             190
264 Lys Lys Leu Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile Tyr Ile
265     195             200             205
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RAW SEQUENCE LISTING   DATE: 11/09/2006
PATENT APPLICATION: US/10/586,072A   TIME: 09:00:52

Input Set : A:\253625.ST25.txt
Output Set: N:\CRF4\11092006\J586072A.raw

268 Asn Ala Leu Ser Glu Leu Leu Gln Thr Pro Ser Gly Gly Glu Gln Pro
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272 Pro Pro Pro Pro Ala Ser Cys Lys Ser Asp His His His Leu Arg Thr
273 225   230   235   240
276 Ala Ala Ser Tyr Glu Gly Gly Ala Gly Asn Ala Thr Ala Ala Gly Ala
277   245   250   255
280 Gln Gln Ala Ser Gly Gly Ser Gln Arg Pro Thr Pro Pro Gly Ser Cys
281   260   265   270
284 Arg Thr Arg Phe Ser Ala Pro Ala Ser Ala Gly Gly Tyr Ser Val Gln
285   275   280   285
288 Leu Asp Ala Leu His Phe Ser Thr Phe Glu Asp Ser Ala Leu Thr Ala
289   290   295   300
292 Met Met Ala Gln Lys Asn Leu Ser Pro Ser Leu Pro Gly Ser Ile Leu
293 305   310   315   320
296 Gln Pro Val Gln Glu Glu Asn Ser Lys Thr Ser Pro Arg Ser His Arg
297   325   330   335
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310 <212> TYPE: PRT
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319 Gly Asp His His Arg Gln Pro Gln Pro His His Leu Pro Gln Pro Pro
320   20   25   30
323 Pro Pro Pro Gln Pro Pro Ala Thr Leu Gln Ala Arg Glu His Pro Val
324   35   40   45
327 Tyr Pro Pro Glu Leu Ser Leu Leu Asp Ser Thr Asp Pro Arg Ala Trp
328   50   55   60
331 Leu Ala Pro Thr Leu Gln Gly Ile Cys Thr Ala Arg Ala Ala Gln Tyr
332 65   70   75   80
335 Leu Leu His Ser Pro Glu Leu Gly Ala Ser Glu Ala Ala Ala Pro Arg
336   85   90   95
339 Asp Glu Val Asp Gly Arg Gly Glu Leu Val Arg Arg Ser Ser Gly Gly
340   100   105   110
343 Ala Ser Ser Ser Lys Ser Pro Gly Pro Val Lys Val Arg Glu Gln Leu
344   115   120   125
347 Cys Lys Leu Lys Gly Gly Val Val Val Asp Glu Leu Gly Cys Ser Arg
348   130   135   140
351 Gln Arg Ala Pro Ser Ser Lys Gln Val Asn Gly Val Gln Lys Gln Arg
352 145   150   155   160
355 Arg Leu Ala Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly Leu Asn
356   165   170   175
359 His Ala Phe Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn Asn Asp
360   180   185   190
363 Lys Lys Leu Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile Tyr Ile

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364         195                 200                 205
367 Asn Ala Leu Ser Glu Leu Leu Gln Thr Pro Ser Gly Gly Glu Gln Pro
368     210                 215                 220
371 Pro Pro Pro Pro Ala Ser Cys Lys Ser Asp His His His Leu Arg Thr
372 225                 230                 235                 240
375 Ala Ala Ser Tyr Glu Gly Gly Ala Gly Asn Ala Thr Ala Ala Gly Ala
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379 Gln Gln Ala Ser Gly Gly Ser Gln Arg Pro Thr Pro Pro Gly Ser Cys
380                 260                 265                 270
383 Arg Thr Arg Phe Ser Ala Pro Ala Ser Ala Gly Gly Tyr Ser Val Gln
384         275                 280                 285
387 Leu Asp Ala Leu His Phe Ser Thr Phe Glu Asp Ser Ala Leu Thr Ala
388     290                 295                 300
391 Met Met Ala Gln Lys Asn Leu Ser Pro Ser Leu Pro Gly Ser Ile Leu
392 305                 310                 315                 320
395 Gln Pro Val Gln Glu Glu Asn Ser Lys Thr Ser Pro Arg Ser His Arg
396                 325                 330                 335
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408 <211> LENGTH: 21
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432 ggggcttatc cccttcgttg aactgggttg ccagcacctc ctctaacacg gcacctccga     180
434 gccattgcag tgcgatgtcc cgcctgctgc atgcagaaga gtgggctgag gtaaaagagt     240
436 tgggggacca ccatcgccat ccccagccgc accacgtccc gccgctgacg ccacagccac     300
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448 agcttggctg cagccgccag cgagcccctt ccagcaaaca ggtgaatggg gtacagaagc     660
450 aaaggaggct ggcagcaaac gcaagggaac ggcgcaggat gcacgggctg aaccacgcct     720
452 tcgaccagct gcgcaacgtt atcccgtcct tcaacaacga caagaagctg tccaaatatg     780
454 agaccctaca gatggcccag atctacatca cgctctgtc ggagttgctg cagactccca     840
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 11/09/2006
PATENT APPLICATION: **US/10/586,072A**   TIME: 09:00:53

Input Set : **A:\253625.ST25.txt**
Output Set: **N:\CRF4\11092006\J586072A.raw**

<u>**Please Note:**</u>
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; N Pos. 1497,1504,1526,1564

VERIFICATION SUMMARY   DATE: 11/09/2006
PATENT APPLICATION: **US/10/586,072A**   TIME: 09:00:53

Input Set : **A:\253625.ST25.txt**
Output Set: **N:\CRF4\11092006\J586072A.raw**

L:10 M:270 C: Current Application Number differs, Replaced Current Application No
L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:15 M:283 W: Missing Blank Line separator, <160> field identifier
L:552 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:1440
M:341 Repeated in SeqNo=7

STATISTICS SUMMARY　　　　　　　　　　DATE: 11/09/2006
PATENT APPLICATION:　**US/10/586,072A**　　　TIME: 09:00:53

Input Set : **A:\253625.ST25.txt**
Output Set: **N:\CRF4\11092006\J586072A.raw**

Application Serial Number: US/10/586,072A
Alpha or Numeric or Xml: Numeric
Application Class:
Application File Date: 07-14-2006
Art Unit: IFWO
Software Application: PatentIN3.3
Total Number of Sequences: 7
Total Nucleotides: 2965
Total Amino Acids: 1431
Number of Errors: 0
Number of Warnings: 4
Number of Corrections: 2

MESSAGE SUMMARY

270 C: 1 (Current Application Number differs)
271 C: 1 (Current Filing Date differs)
283 W: 1 (Missing Blank Line separator)
341 W: 3 ((46) "n" or "Xaa" used)